MODIS Technical Team Meeting
Thursday, August 1, 2002
Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Barbara Conboy, Shaida Johnston, Wayne Esaias, Dorothy Hall, Jack Xiong, Eric Vermote, Gary Alcott, Mike Teague, Michael King, and Bill Barnes, with Yolanda Harvey taking the minutes.

1.0 Upcoming Events

- Remote Sensing of the Earth's Environment from Terra, a workshop at the International Summer School on Atmospheric and Oceanic Sciences, August 25-30, 2002, L'Aquila Italy
- 34TH COSPAR Scientific Assembly, October 10-19, 2002, in Houston, TX, (abstract deadline past)
- MODIS Outreach Workshop on Land Surface Radiation and Snow and Ice Products, October 21-22, 2002, Boston, MA

2.0 Meeting Minutes

2.1 General Discussion

Salomonson called the meeting to order by announcing that the Tea and Posters session originally scheduled for September 24th will now be held on September 17th because of a scheduling conflict. He asked that anyone with existing posters please contact him to participate. Xiong said that MCST has a poster that they will display at the session.

Salomonson announced that the MODIS model, currently located in the lobby of Building 33, will be moved to Building 32 on the 1st floor by MODAPS. When the model is moved, the new poster designed to accompany it will be hung. The model will not be moved until after the Raytheon presentation to the Goddard Center Director, however.

Johnston reported that she has completed the new Product Change Request form (while handing out a chart of the process flow). She said that the only difference in putting a change through is that there is now a standardized form to fill out that will, depending on who is affected by the change, determine the coordination of changes. This will go in effect for Collection 4. Esaias asked that the discipline leads be included in the process for those changes that affect people downstream, and Johnston said that she will add a requirement to cc the discipline's project lead on the chart. Barnes asked how they will know whom the changes will affect, and Johnston said that that determination is part of her role, and she will be involved in the coordination. She also added that the changes won't go into effect until everyone concurs on the process, and if you have any questions about it, please call her.

Hall said that she is working on a CD for an upcoming outreach workshop. The CD will include MODIS data comparisons, animations, and images.

2.2 Instrument

2.2.1 Terra MODIS

Barnes said that on July 26th a number of unexpected taxi errors occurred while in the process of calibration. After studying the incident, they found that there was no impact on science data and only minor impacts on engineering data. From now on they plan on using a different calibration method to avoid these kinds of occurrences.

2.2.2 Aqua MODIS

Aqua went into safe hold on Friday, July 26th, and will go back online on Monday, August 5th. The instrument will be operational on Wednesday, August 7th. Hall said that it will be interesting to see if there are any more bad detectors on Band 6 due to thermal cycling once MODIS comes online. Barnes said that that will be the first thing they look at.

2.3 DAAC

Alcott reported that the Oceans reprocessing is running well and that they are hoping to be done around October 8th, worst case scenario by October 20th, and the reprocessed data will be fully ingested by the end of October. He noted that the archive is far behind schedule. He also noted that the initial errors with order processing have dropped from 19% in February to 3% in July, and has a lot to do with Mike Moore's presentation last week.

2.4 Oceans

Esaias said that the data products are performing very well. They have weekly meetings with SeaWiFS on the transition process which going very well. His feeling is that MODIS reprocessing is going well and that there will be no changes. He said that Gene Feldman did comparisons of SeaWiFS and MODIS, and the water leaving radiances for clear oceans are unbelievably identical. The green bands are nearly an exact match! The comparisons that were shown at the Science Team Meeting had an error in them but with the corrections made the matchups just described have resulted are showing up spot on now. He said that it is good to see that other people here at Goddard are seeing MODIS' value, and that they recognize that having multiple chlorophyll products is not redundant. King asked if NASA HQ know this, and Salomonson said that there is some knowledge of this at HQ, but we need to strive to give them further information.

2.5 Land

Salomonson reported that Land is moving to a straight SIN-grid conversion from the ISIN-grid. He said that he talked to Chris Justice, who said that there is predominant consensus in the land community on this matter. The amount of time it will take to make the necessary changes is not clear yet, but it won't be until after October 1. Justice said that it will be ready at the earliest by the end of October. Salomonson said that he is not going to push Land for early October reprocessing if they aren't ready because it is important to respond to user community desires such as this. It appears that the reprocessing for Atmospheres can start when ready and then Land reprocessing can catch up. Teague said that they can hold up to 45 days of data on disk to facilitate this

scenario. King said that the main thing in Atmospheres is the algorithm update, which is very important, and will be able to run in October. King continued that they have already submitted updates to L3, and on Monday they will submit updates to the cloud optical properties algorithm. Most of the changes they are putting in are physics improvements, which are very important to the quality of the algorithm. Vermote asked about the cloud mask, and Teague said that was delivered on Saturday July 27, will be released on Monday August 5, and will be ready for the second Land science test. Vermote asked if it was the last one, and Teague said yes, it is the last one expected.

Vermote reported that the Land group's focus is on the ISIN to SIN projection change for Collection 4. He thinks that everything is okay for starting reprocessing on time. As for validation, most of the products are moving toward more comprehensive Level 2 validation. He is preparing for a workshop on October 21st and 22nd, and is happy about the outcome of the previous workshop and thought that maybe all the disciplines could do the same. This one will be in Boston, Massachusetts. Salomonson asked whether Oceans will follow a similar recipe, and Vermote said that it was Oceans who started the whole thing and inspired Land. Esaias said that for the next Science Team Meeting, HQ wants a comprehensive Oceans meeting, so could MODIS have the Science Team Meeting back to back with the Oceans Meeting in January so that they can keep the number of meetings down? Salomonson said he would like to make every effort to have the STM open to the community and would like more poster presentations. King asked if the STM was well attended, and Salomonson said yes, about180 people attended. Conboy suggested reserving an extra room for the posters, and Barnes suggested putting the food and posters in one room. Vermote said that we still need to discuss what should be done to add or provide another phase in the CD/ftp data set. Salomonson said that Oceans is doing an addendum for the current CD, but he has not developed a specific concept beyond that. They are in the process of reproducing the current CDs (about 3000-5000 of them).

2.6 Atmosphere

Salomonson said that the albedo product is validated, and the polar winds product is making a big impact on the Data Assimilation Office and the European Center for Medium Range Weather Forecasts. Overall, we are starting to see impacts on science by MODIS products. King said that Eric Moody is using MODIS surface reflectance data and is filling in holes in the current data due to clouds with albedos produced in the same latitude band from pixels containing the same ecosystem as the missing data. These results look most impressive and are producing a very consistent data set with seasonal variability (every 16 days). Esaias said that we can use the monthlies directly in maps, and that the high reflectance products are very useful. Salomonson said that we have a poster of the US West Coast pass from June 25th, Descloitres has made a chip of the San Joaquin Valley, and he would like someone to process the clouds that contain numerous ship tracks off the California coast. Salomonson asked Harvey to get the chip numbers so that someone from Atmospheres could do the necessary processing. Returning to the subject of the polar winds, Barnes said

that they are trying to make that product operational on NPOESS, but it won't appear until the 2011 model (2nd NPOESS).

Salomonson said the product tables that show the status of data products need to be updated and to reflect the levels of validation that have been developed. It looks like every land product is or will be validated at some level very soon except for two. The majority of Oceans will be validated for at least one year, and when reprocessing is done, they will be validated for a longer period. King said that they have a huge amount of updates going in on Monday for the cloud optical properties PGE. Salomonson asked how we decide on validation of cloud products? He wondered whether validation is based on field experiments, or only in certain conditions? King replied that it is generally much harder to validate cloud properties (MOD 06) products, and that field campaigns such as the recently completed CRYSTAL-FACE campaign will provide crucial ancillary information with which to compare the satellite-derived cloud optical properties. Surface sites, such as ARM-based radar and lidar sites, will also be used over time, but at specific locations. King said that profiles and water vapor are looking pretty good.

King said that he wasn't at the Science Team Meeting because of the CRYSTAL field program that was on going at the same time. The experiment had six different aircraft in the field coordinating with three satellites. During the experiment, they did 11 different research flights. King explained what each aircraft was doing and what equipment each was using as well as how they coordinated with the satellites. He said that they ended up with very nice 3D characterizations because of the range of equipment available, and showed images of the study area. He said that they got a wealth of information and feels that MODIS did very well in the experiment. Barnes asked if the safe hold on Aqua bothered King, and King replied that the last flight was a Terra flight on Monday, and Aqua flew over on Sunday, so the safe hold wasn't an issue at all because the Aqua safe-hold didn't occur until Monday evening after the experiment had been concluded. Terra operated fine all the time, and the experiment went very well. Barnes said that they are starting to look at cross calibrating Terra and Aqua using the Moon. Esaias said that they can use MOBY to cross calibrate the visible bands. Salomonson said that on the deep space maneuver (DSM), the latest plan says that Terra should go first.

2.7 MODAPS

Teague said that forward processing on Terra and Aqua is going well. This was the first week of heavy Aqua input, and they're still processing in excess of 2x. The one problem in forward processing was an Oceans issue (they couldn't insert Aqua dailies for Oceans), but it is being corrected. That was the only major problem he knows of, and it wasn't a science data issue, but rather a metadata issue. MODAPS is processing nicely at 9x, about 14 months of data, and are storing about 100 days of data on disk while they wait for the DAAC to catch up, but they are not worried. Recently about 13 monthlies were lost, which they had to reprocess, but it didn't turn out to be a problem because they reprocessed very quickly. MODAPS will be able to do Oceans yearly for the first time. Teague said that they finished the first Land science test. They processed all 32 days on a

new machine, including the collection 4 Land PGEs that they had. They are missing a few of them, and as soon as they receive them they'll run the test again right away. The new machine's x-rate was higher than anticipated; it processed 32 days of data in about 9 days, and did 28 days of Atmosphere in 3 days, so it is a quick machine that will be very responsive to science testing with large quantities of data. The second Atmosphere test is scheduled for Aug 19th and will last 3 days. MODAPS will then work on the second Land test, then hopefully Land reprocessing.

3.0 Action Items

3.1 New Action Items

3.1.1 Yolanda Harvey to forward information about Aqua MODIS US West Coast image to Atmospheres so that they can process images for the Aqua MODIS first light poster.

3.2 Action Items Carried Forward

3.2.1 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.
Status: Open.
Ed Masuoka and Robert Wolfe plan to meet with the Terra Flight Operations Team to see if they can run definitive ephemeris 2-4 times per day. The context for this issue to provide better geolocation information for things like fire front tracking and similar issues.

3.2.2 The procedure for releasing Aqua MODIS products needs to be further refined via Discipline discussions and coordination with the Science Team leader, et al.
Status: Open.